Description for the general public

The main goal of the presented project is application of alkoxyallenes as readily available C_3-building blocks for the synthesis of polyfunctionalized cycloheptane of type **I** and pyrazole **II** derivatives of potential biological activity (Fig. 1). The first mentioned class is considered as unprecedented class of higher homologues of inositol and its biologically active structural analogues. On the other hand, due to general importance of fluoroorganic compounds in both pharmacology and materials sciences, detailed studies on applications of *in situ* generated trifluoromethylated nitrilimines as 1,3-dipoles in [3+2]-cycloaddition reaction with title alkoxyallenes will be performed. The planned tasks of the submitted project are multidisciplinary and include synthesis, structural analysis, and biological studies of selected final products. The proposed research should impact in the first line on such areas as modern organic synthesis and biochemistry, and should give new insights into the structure-biological properties relationships.

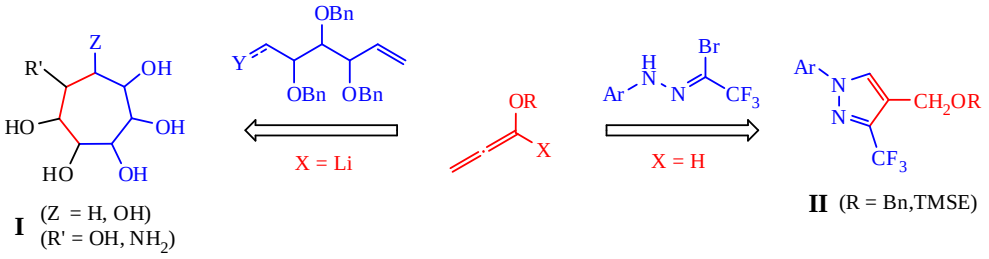

*Figure 1. The general outlook of the synthesis of polyfunctionalized cycloheptane **I** and pyrazole **II** derivatives using alkoxyallenes.*